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Ron Brown's Legacy May Be Survival of Commerce Dept.

Congressional Republicans insist that the death of Commerce Secretary Ron Brown will have no effect on their drive to abolish the Commerce Department, center of the Clinton industrial-technology programs that they deplore as "corporate welfare."

But Brown's death, and the highly publicized grieving that it evoked on the part of the President and others, could be the salvation of the Department.

Brown said in a press briefing shortly before his death that the wipe-out plans had lost momentum. But the would-be terminators were even then stirring again, looking for an election-year trophy in fulfillment of the Contract With America's pledge to reduce the size of government. The business community, though carefully cultivated by Brown, provided scant support for his Department, concentrating its lobbying instead on tax reduction and regulatory relief.

In several public eulogies of Brown, the President has invoked a martyr's image, deservedly picturing him as a devoted public servant who died in the line of duty.

Republican henchmen, on the other hand, have whispered reminders that Brown was under investigation for several

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unsavory-seeming wheeler-dealer operations prior to taking office. But when it comes to public opinion, and Congressional votes, the favorable image is likely to exert the greater political pull.

The would-be terminators of the Commerce Department now must contend with its preservation as a memorial to the late Secretary.

At the Department, Mary L. Good, the Under Secretary for Technology, has been designated Acting Secretary. Highly regarded as a research administrator, Good, a former executive at Allied Signal, lacks the political credentials that the White House is said to deem essential for the post.

Meanwhile, the Department's "corporate welfare" continues, though without expected growth, under the banner of the Advanced Technology Program, administered by the National Institute of Standards and Technology.

Still without a permanent budget for this fiscal year, the Commerce Department and its many agencies have been operating under a succession of continuing resolutions, the latest of which expires on April 24. With expenditures restricted to 75 percent of last year's level, the technology program is putting about \$255 million into 250 projects. But it is legislatively barred from running competitions for new projects.

Engineering Council Asks Members to Oust President

Faced by his unbending refusal to resign, the big chiefs of engineering moved last week to oust the self-styled reform candidate, Harold Liebowitz, who last year beat their choice for the Presidency of the National Academy of Engineering.

Liebowitz responded that they're out to get him because he wants to elevate engineering in national science and technology policy deliberations. Casting himself as the champion of the engineering profession, he charged that they're content to play a secondary role to science. And he insisted that he'll stay in office for the remaining five years and three months of his term [SGR, March 1, 15].

Amid anonymous whispers that he's gone over the edge mentally, the NAE Council on March 29 voted a resolution of "no confidence" in Liebowitz, and solicited NAE's 1800

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In Brief

Latest in the National Science Foundation's extensive inventory of programs: The Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring, accompanied by a \$10,000 grant. PAESMEM, as it's acronymed in an NSF announcement issued April 10, "will recognize outstanding mentoring efforts or programs which enhance the participation of underrepresented groups in science, mathematics and engineering at K-12 through graduate level." Up to 10 individuals and institutions will be honored annually.

In the early search for big differences between President Clinton and Senator Bob Dole, the shoo-in Republican nominee, their stances on the fate of the Department of Energy stand out. Asked for their positions during the New Hampshire primary, Clinton said he'd keep DOE. Dole said he'd abolish it, because DOE "serves little purpose in obtaining energy or environmental benefits in the public interest."

But DOE is undaunted by political fusillades from the right, particularly concerning its interventions in the energy marketplace. To promote fuel-cell technology, the Department announced last week, it will make \$15 million available this summer "as partial assistance for fuel cell purchasers."

Where's that National Bioethics Advisory Commission that President Clinton announced last October? The selection of members was delayed by the government shut-downs, but it's coming along, according to a White House official, and membership of about 15 should be announced soon. In conjunction with establishment of the Commission, about a dozen federal agencies supporting research on humans must report on their ethics programs.

... Some Early Backers Advise Liebowitz to Resign

(Continued from Page 1)

members to append a recall provision to the Academy's bylaws. The vote, by mail, will take place over the course of a month, and, if a recall procedure is approved, the members will be asked to vote again, this time to remove Liebowitz from office.

The arithmetical odds in the two-stage balloting would seem to favor the ouster movement. Under the NAE bylaws, adoption of the recall procedure requires a majority of the votes cast. Liebowitz was elected last year in a 697-660 vote. But some of his backers have since abandoned him. There's no sign of new recruits on his side, while his opponents are campaigning against him with a vigor that was absent in last year's election. The expectations are that if Liebowitz loses at the ballot box, he will turn to litigation to keep his office. He's got a lawyer.

The NAE Council, chaired by Norman Augustine, CEO of Lockheed Martin, is drawn from the senior ranks of industrial and academic engineering, and being mainly of a decorous nature, its members are appalled that their inhouse brawl has spilled out into public view. They realize that it's likely to get worse as they apply brute force against Liebowitz.

But he remains unmoved, pointing out that he won a contested election—a novelty that he imposed on the NAE by obtaining a place on the ballot as a petition candidate after the official nominating committee passed him over. Formerly Dean of Engineering at George Washington University, he gained the NAE Presidency after failing in a similar petition candidacy four years earlier.

Following months of skirmishing between Liebowitz and the Council, sentiment against him seems to be mounting, with even some of his electoral supporters urging him to resign. Among them was the late David Packard, who, in a letter dated March 6, just a few weeks before his death, urged Chairman Augustine to work for Liebowitz's removal.

Packard, like others, said he was attracted by Liebowitz's election-campaign pledges to broaden membership participation in the Academy, which, by general account, has been a stuffy, rigid institution, run by a small band of oldtimers and loyal staff underlings. But, Packard continued, Liebowitz's "actions have led to a divisiveness" in the Academy complex.

Liebowitz, age 72, quickly assailed last week's recall move, issuing a statement that said the Council is tied to a failed status quo in which the NAE is subservient to the National Academy of Sciences, the senior partner in the linkup of the two academies.

The no-confidence vote by the NAE Council was the second one directed at Liebowitz. In February, the Council of the Academy of Sciences declared its lack of confidence in Liebowitz, accusing him, among other things, of lone-wolf fund-raising in violation of what was said to be a long understanding that the two academies would limit themselves to pack hunting for federal study contracts.

Liebowitz charged last week that studies conducted by the Research Council are chosen by a self-perpetuating staff on the basis of funding availability rather than national importance. He said a review of the written understandings between the two Academies shows that the NAE is not precluded from undertaking projects for the federal government—which paid the Academy complex \$165 million last year for studies and services.

And he argued that the NRC "for the most part is not pursuing engineering projects of national interest—such as protection of the nation's technological investments, technical barriers to our hardware systems, the aging of our aircraft fleet, the specific cleanup of environmental sites around Navy and other military bases, and the future development of engineering education in the next 20 years.

"These are true engineering challenges," Liebowitz stated in his message to the engineering membership, adding that "the NRC should be directing effort toward them, and that effort should have a predominantly engineering, rather than scientific, perspective."

"The real problem between the NRC and me," Liebowitz declared, "is that I do not accept that NAE should be subservient to the NAS on matters of engineering policy affecting the national interest."

He called for a review of "organizational structures," thus hinting at autonomy for the NAE—a buried, forbidden topic ever since, after much wrangling and negotiations, the NAE was created 32 years ago under the Congressional charter of the century-old Academy of Sciences.

Reporting on his foraging for federal money for NAE engineering studies, Liebowitz said, "I have found millions of dollars of funding for significant engineering projects."

Meanwhile, Bruce Alberts, President of the Academy of Sciences, has followed up his organization's no-confidence vote with a letter to scores of federal officials, advising them that "Dr. Liebowitz is no longer authorized to represent or conduct business on behalf of the National Research Council." Disputing Liebowitz's charges of neglect of engineering problems, Alberts issued a list of titles of hundreds of "engineering-related studies" conducted by the NRC since 1993.—DSG

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Causes of Power Struggle at NAE Run Deep

Personality and ambition are not the sole causes in the nasty struggle over the Presidency at the National Academy of Engineering. The difficulties there also arise from a power structure within the Academy complex that's out of whack with the modern-day economic realities of research and development.

Researchers from universities predominate in the National Academy of Sciences (NAS), the big daddy in the relationship with the National Academy of Engineering (NAE). In the Academy of Sciences, 79 percent of the members are from academic institutions, and only 5 percent are categorized as from "business," which includes industry. The others are mostly basic researchers from government laboratories, closer in spirit to universities than to industry. The predominance of academic scientists reflects the NAS's historic role as a bastion of basic research.

Business and industry, as might be expected, are far stronger in the NAE, accounting for 49 percent of the membership, with 42 percent from universities.

Business and industrial members in the Academy complex are the minority—but out there on the American landscape, industry has become the dominant force in research and development, by a wide margin. Twenty years ago, the federal government—the main source of academic research money—spent \$20 billion on R&D, including basic research; industry spent \$17.6 billion. The spending pattern has since radically reversed, with industry far in the lead by 1994—spending \$102 billion, compared to \$62 billion by federal agencies.

Politics today worries more about technology and its economic implications than about science, which has been in the fiscal doldrums for several years. The industrial role in R&D has become so powerful that the Pentagon's research and procurement managers stress the importance of "dual-use" for meeting military needs.

However, in prestige and visibility in Washington, science remains on top. The overall NAS-NAE complex is commonly referred to as the National Academy of Sciences—legally correct, but slighting to the engineers. With few exceptions, White House science and technology advisors are drawn from academic backgrounds, a tradition dating back to Manhattan Project alumni serving as Presidential science advisors.

Scientific chiefs feel at liberty to pontificate publicly on matters of industry, technology, engineering and economics. Engineers are less evident, often because of conflict-of-interest concerns arising from corporate relations. But whatever the cause, it's the scientists who fill the political circuit.

The official party line insists that the two Academies are co-equal in certifying high professional attainment and as advisors to the federal government. But, in fact, the Science Academy is far older and far snootier

than the NAE, and legally and operationally, the NAS is the dominant partner in the relationship.

NAS membership, keyed to accomplishments in basic research, is homogeneously concentrated in universities. The NAE election criteria are broader and vaguer, including "unusual accomplishments in the pioneering of new and developing fields of technology." The NAE membership is far more diverse, and includes senior corporate executives whose election raises eyebrows on the scientific side of the house.

Among the scientists, there's a conviction that their elections are based on superior standards. The engineers are aware of their attitude, as reflected in a member's recent letter to the NAE Council. Recalling attendance at meetings with NAS members, the NAE member wrote that he "heard some members of the NAS express disdain for there being an NAE at all and one even said or implied that it would only be a second class group for those who couldn't make it into the NAS."

The Academy of Sciences holds the basic Congressional charter, issued in 1863, under which both Academies operate, along with the Institute of Medicine. However, the NAS was more than a disinterested godfather when it helped a group of engineers create the NAE in 1964. The move squelched an alternative plan for a wholly independent Academy of Engineering, a prospect that raised the possibility of inter-Academy competition for federal contracts and influence.

The two Academies agreed to perform their advisory work through the jointly operated National Research Council, chaired by the President of the National Academy of Sciences. By virtue of his Presidency of the National Academy of Engineering, the embattled Harold Liebowitz serves as Vice Chairman of the Council, but by edict of the reigning NAS, he has been deprived of power and pay in that role. Liebowitz's behavior forced the step, NAS officials explain. Regardless of the cause, the episode shows who's in command.

The engineering profession, split among universities, industry, and small-scale practitioners, hasn't coalesced around a theme or institution. The NAE structure acknowledges the fragmentation by dividing power at the top between academe, which usually holds the Presidency, and industry, which gets the number two post, Chairman. The arrangement seems to have maintained peace within the NAE, but the linkup with the Academy of Sciences is creaky and increasingly out of date.

Liebowitz is cantankerous, garrulous and bull-headed, among other characteristics that were all visible during his election campaign. Nonetheless, he won on a simple theme: that engineering is submerged and subservient in its relationship with the National Academy of Sciences.

On the State of R&D, New Study Reflects Gloom

The American research enterprise is suffering from fiscal neglect, corporate haste for quick profits, and lack of a political consensus on the appropriate federal role. And what's the key to salvation? Partnerships of academe, government and industry, along with more money, especially from industry.

That's the verdict of a study released last week by the Council on Competitiveness, a Washington-based outpost of high-tech industry, major research universities, plus a little window dressing of organized labor.

It's all been said before, much of it by advocates of the Clinton Administration's designs for heavy federal spending

Endless Frontiers, Limited Resources: US R&D Policy for Competitiveness (145 pp., \$25, plus \$3.50 for domestic shipping, \$6.50 overseas). Order from: Council on Competitiveness, Publications Office, 1401 H St. NW, Suite 650, Washington, DC 20005; tel. 202/682-4292; fax 202/682-5150; also available on the Internet: <http://nii.nist.gov/coc.html>. Click on Publications.

on industrial R&D and link-ups among the three sectors. But the Council's report conspicuously certifies the existence of a rising level of elite *angst* about the condition and future of R&D.

The report goes beyond the traditional wailing about disappointing budgets, and warns that, without financial growth and collaboration, the national R&D enterprise will become "a disconnected set of hobbled institutions that cannot generate the bold advances on which the American standard of living depends."

Noting the Republican preference for basic research and opposition to the Clinton Administration's zest for industrial R&D programs, the report says the basic and applied designations fail to reflect today's realities of research and commercialization. "In the final analysis," it states, "policy makers must cut through this semantic quagmire and come to grips with two fundamental questions:

"What research is necessary to maintain the nation's scientific and technological competitiveness?

"Which of those research endeavors will not be accomplished without government investment?"

The report adds: "Under the changed circumstances of the mid-1990s, the United States has no choice but to address these questions systematically."

Attending the release of the report were the Chairman of the Council, Paul Allaire, CEO of Xerox, and the co-Chairmen of the Council's R&D Advisory Committee, Gary L. Tooker, CEO of Motorola, and Frank H.T. Rhodes, recently retired President of Cornell University. Rhodes also chairs the National Science Board, the policymaking body of the National Science Foundation. Also present, former NSF Director Erich Bloch, who supervised preparation of the report as a Distinguished Fellow at the Council.

Allaire emphasized that the report is "not an attempt to set budget priorities." It aims, he said, to encourage creation of "a new framework" for research that will intertwine the R&D resources of universities, government and industry.

Without specifying dollar amounts, the report states that industry must emerge from a long spending slump and increase its R&D activities to make up for declines in federal budgets described as grim "even under the most optimistic scenarios." It also urges firms to collaborate with each other "to maximize their own R&D efforts." And, noting the venerable claim that foreign firms lead in commercializing American basic research, the report says, "Industry, universities and government labs must work together to guarantee that the US economy is the prime beneficiary."

The message for government dovetails with Clinton Administration R&D policies that Republicans have shredded on Capitol Hill. Describing federal R&D spending as "an investment that can often have important economic and social multipliers," the report states that a "core mission of R&D policy should be to stimulate the research required to keep the United States economically competitive, particularly research related to critical technologies that are out of reach of industry sectors themselves."

The Council chiefs were asked whether that passage could be taken as an endorsement of the Administration's industrial R&D programs, particularly the Advanced Technology Program (ATP) in the National Institute of Standards and Technology.

Allaire replied that the Council had previously expressed support for ATP and similar programs, and Tooker described ATP as "appropriate," for the federal government, adding that "to categorically eliminate these programs would be a mistake."

The report also expresses a need for an "overhaul and rationalization" of the 700-plus federal laboratories. Acknowledging the political difficulties in that task, it suggests that the White House Office of Science and Technology or "a separate commission" determine where the federal government receives the best return on research expenditures.

The government role in support of academic research is described as both indispensable and in decline, falling from 70 percent of university research in 1980 to 55 percent in 1993. But the report does not call for more federal money for academe. "Maintaining the system's strength does not mean increasing or even preserving its size," it states. Rather, the report suggests, "Government should gear its support toward ensuring that the nation has centers of excellence in critical fields, not toward enlarging the system."

The Council officials said they've been making the rounds in Washington to discuss the report with Congressional and Administration officials. They said arrangements are being made for a meeting on the report at Georgia Tech and possibly at UC San Diego, and that they're also hoping to hold a "national summit."

Non-Profit Pay Checks

Back again for the first time since April 1, 1994, SGR's reports on senior salaries and related fiscal matters in the leading non-profits of research and higher education. Having pioneered this popular form of fiscal voyeurism, starting in 1987, SGR dropped out after other publications picked it up. We return at the repeated demand of readers, some complaining the reports elsewhere lack interpretative comment. Henceforth, we'll cover one non-profit per issue, rather than annually overwhelming a single issue with a pack of them. The data are from the IRS Form 990, the tax form for organizations holding tax exemptions under Section 501(c) of the Internal Revenue Code. By law, they're required to make the returns available to anyone upon request. However, the glasnost provision is not well known and requests are infrequent.

Howard Hughes Medical Institute

At the top of the remuneration scale at the nation's richest philanthropy is President Purnell W. Choppin, salary \$525,000, plus \$114,000 in benefits, according to HHMI's latest tax return, filed in January for the Hughes fiscal year ending August 31, 1995. (On the IRS calendar, it's for tax year 1994).

Demonstrating that it is better to give than to receive, Choppin's take exceeded by far the ample pay and benefits that Hughes bestowed on even its two highest paid researchers—Philip Leder, of Harvard, \$341,101 plus \$69,601 in benefits, and Eric R. Kandel, of Columbia University, \$251,759 and \$56,240. Hughes, unlike most other philanthropies, puts its scientist-beneficiaries on the payroll, though they remain at their institutions.

In tax year 1993, Choppin was paid \$500,000 in salary, and \$473,000 in the year before that.

The paltry salary growth may reflect a sensitivity to hostile mutterings in political circles about non-profit tax exemptions. Whatever the reason, while the pay at Hughes is rotund by academic and government standards, annual increases have been circumspectly small, running just a bit ahead of inflation.

Also salaried at \$525,000 on the latest return is Carter F. Wolfe, Vice President and Chief Investment Officer, but his benefits were only \$69,705.

Other salaries and benefits at HHMI, as reported on the 1994 tax return:

Lillian H. Blucher, Managing Director for Investments, \$405,000; \$63,376.

W. Maxwell Cowan, Vice President and Chief Scientific Officer, \$387,000; \$80,871.

Jon S. Strauss, Vice President, Chief Financial Officer, and Treasurer, \$278,000; \$50,612.

Ellen Safir, Managing Director for Investments, \$270,000; \$40,729.

Joseph G. Perpich, Vice President for Grants and Special Programs, \$267,000; \$56,166.

Donald S. Harter, Senior Scientific Officer, \$233,800; \$48,147.

Joan S. Leonard, Vice President, General Counsel and Secretary, \$220,000; \$38,994.

Mark W. Smith, Controller, \$173,500; \$39,105.

Craig A. Alexander, Assistant Secretary, \$175,000; \$29,288.

Edward A. Palmerino, Assistant Controller, \$134,308; \$28,532.

Fifteen trustees, the usual collection of corporate, financial and academic elders, were paid \$40,000-\$60,000 each per year.

Deriving funds from an endowment that reached nearly \$8.3 billion last year, HHMI distributed \$380 million for 280 biomedical researchers and supporting staff at universities and hospitals in the US and abroad and for postdoctoral and graduate fellowships and undergraduate science-education programs.

A job somewhat comparable to the HHMI presidency, Director of the \$12-billion-a-year National Institutes of Health, pays \$140,000—a figure that reflects America's raging political hostility to public service.

The Hughes salaries, large as they appear, are dwarfed by the financial rewards of the pharmaceutical industry and Wall Street, where some of Hughes' executives might be employable.

Hughes, incidentally, has been relieved of the onus of being the world's most richly endowed philanthropy, edged out by the British-based Wellcome Trust, which became number one by a billion or two last year when Glaxo bought out the Wellcome pharmaceutical firm.

Next: National Academy of Sciences

DOE Backs Aid for CERN

US dedication to international collaboration in big science is about to be put to the most telling test—cash contributions for a far-away project, as much as \$450 million.

The project is the Large Hadron Collider (LHC) at the CERN laboratory, near Geneva, the biggest physics project on the drawing boards today, following the political collapse of the Superconducting Super Collider.

US physicists sold the SSC to Congress with assurances—based on hope—that Europe would share in the costs. Failure to deliver fed Congressional disenchantment and helped bring it down, leaving a big hole in Texas.

The US high-energy physics community is eager to assist the LHC, a natural move in the brotherhood of physics and politically useful for reinforcing the collaborative spirit.

Martha Krebs, chief of research at the Department of Energy, announced on March 28 that negotiations for participation in the CERN project are proceeding and "It is anticipated that agreement will be reached this year."

Asked about the SSC experience, she said, "That's not been an issue in recent discussions with Congress. But it might be a problem, particularly with members of the Texas delegation."

Clinical Center Dominates Planned NIH Budget Rise

A reshuffling of spending plans or another feat of Congressional magic will be necessary if the National Institutes of Health is to avoid a slide down the inflationary slope.

The President's budget for the coming fiscal year proposes a ground-holding 3.9 percent increase of \$485 million for NIH, which would bring the grand total to about \$12.4 billion.

But, as the fiscal hawkkeys at the Washington-based Dana Alliance for Brain Initiatives point out in an analysis, \$274 million of the increase is reserved for constructing a replacement for the crumbling Clinical Center on the Bethesda, Md., campus—with a final price tag estimated at \$310 million. With the bulk of the construction cost written into the proposed budget for next year, growth would be paltry throughout virtually all the rest of NIH.

Examining the numbers for NIH's institutes and centers, the Dana analysts note that six of them would receive increases of 2-3 percent, while 12 would fall below 2 percent. The biggest gainers after the Building and Facilities account would be the National Center for Genome Research, budgeted for \$178 million, a 5.33 percent increase, and the National Library of Medicine, \$154 million, an increase of 3.35 percent.

Funding for the Office of the Director would decline by nearly 3 percent, to \$227 million, while the Center for Research Resources would drop by 4 percent, to \$309 million.

Prior to this year, the Clinical Center costs would have been paced over the multi-year construction period, rather than having most of it provided up front. But the Office of Management and Budget says it prefers to have all the money in hand when a big project commences. That's the way the Navy builds aircraft carriers, OMB explains.

Job Changes & Appointments

M.R.C. Greenwood, former Associate Director for Science in the White House Office of Science and Technology Policy, has been appointed Chancellor of the Santa Cruz campus of the University of California, succeeding **Karl S. Pister**, who will retire in June. Greenwood left OSTP last year, and has been at the UC Riverside campus as Dean of Graduate Studies and Vice Provost for Academic Outreach.

At the Department of Energy, **Steven K. Galson** has been appointed Counselor for Science and Health to Secretary O'Leary and Chief Medical Officer of the Department. A member of the Public Health Service, he formerly was Senior Advisor to DOE's Assistant Secretary for Environment, Safety, and Health.

Carla Carlson, a longtime staff member of the Board on Agriculture at the National Academy of Sciences, has been appointed a Program Director at the University of Minnesota's Hubert H. Humphrey Institute for Public Affairs, where she will be working on rural development issues.

Whether there's any reality to these numbers and spending strategies is a separate question. The White House has traditionally come in low on the NIH budget in expectation of Congress adding extras for its favorite agency. That's what happened last year, when Congress rejected the miserly figure proposed by the White House and voted a 5.7 percent for NIH.

The managers of that accomplishment, Rep. John Porter (R-Ohio) and Sen. Mark Hatfield (R-Oregon), are aiming for a repeat. But if they can't top the sum sought by the President, they can take another route to relieving pressure on the NIH budget—by financing the new Clinical Center on a year-to-year basis, rather than all at once.

A Call to Lobby for Science

From remarks by NSF Director Neal Lane at a panel discussion on The Future of Federal Funding for Science and Engineering, April 8 at Rutgers University.

Engineers and scientists need to carry the message of value, application, contribution, and investment to the people whose lives are shaped by science and technology and who pay the bills for our work. I am not suggesting that this be a technical lecture but rather a timely, down-to-earth dialogue, one carried out in schools, community organizations, guest editorials, TV interviews.

We should not suppose that just because this might be an awkward or unsolicited task on our part, that the public will not understand. They will, I think, be especially interested if we engage in a dialogue in which we aim to learn from the public about their perception and needs and then provide information they want in language they can understand....

We need to move our knowledge and understanding beyond our own community if we want public recognition of its value for continued support.

Why, you may ask, do we need to do this? We need to do this because nobody else but members of the science and engineering community really understands science and technology, what research is all about, how education—learning—is enriched in a research environment, the complex interdependence and cross-fertilization that characterize great universities like Rutgers, and the true value, the tangible benefits of science, engineering, and technology to people's lives. I'm afraid that if we who do understand these things don't speak up, nobody will. And the American people will be the losers.

I often hear my friends and colleagues worrying that we will appear "self-serving" by doing this. My response is that if the "self" is the American people and leadership of the US in the 21st century, then I wouldn't be too worried about appearing "self-serving."

In Print

(Continued from Page 8)

From the General Accounting Office (GAO), no charge:
Telecommunications: Initiatives Taken by Three States to Promote Increased Access and Investment (GAO/RCED-96-68; 50 pp.), reports favorably on efforts by Iowa, Nebraska and North Carolina to prod telephone companies toward providing broad public access to telecommunications services. To accomplish this, services are being made available in local public buildings, with state and federal agencies helping local organizations to pay for equipment and connections, the report states. Iowa and North Carolina, it adds, "charge the same price for using the network at every location, even at remote locations that are more expensive to serve. Nebraska has arranged for local schools to get discounts on service from telephone companies." The report notes, however, that despite a high priority in the three states for linking high schools to the network, fewer than half have been connected. The report was requested by Senators Richard Lugar and Patrick Leahy, Chairman and ranking Democrat, respectively, on the Committee on Agriculture, Nutrition, and Forestry.

FDA Laboratories: Magnitude of Benefits Associated With Consolidation Is Questionable (GAO/HEHS-96-30; 47 pp.), says politics rather than claimed economies influenced site selections for consolidating the nationwide network of laboratories operated by the Food and Drug Administration's Office of Regulatory Affairs (ORA). The plan, extending over 20 years at a cost of \$950 million, calls for closing several of ORA's 18 field laboratories, building a few new ones, and consolidating operations in five "mega-labs" (in New York City, Atlanta, Los Angeles, Seattle, and Jefferson, Arkansas) and four special-purpose facilities (in Cincinnati, Philadelphia, San Juan, and Winchester, Mass.). FDA says the plan would save \$91 million, compared to the cost of replacing existing facilities. But the GAO states that FDA's "site-selection decisions were based mainly on where it thought it would receive congressional approval." Specifically named by the GAO as political choices are the sites in New York City, Arkansas, and Los Angeles. The report was requested by Senator Paul Sarbanes (D-Maryland), and three Representatives from western New York State, John LaFalce, a Democrat, and Bill Paxon and Jack Quinn, Republicans.

Land Ownership: Information on the Acreage, Management, and Use of Federal and Other Lands (GAO/RCED-96-40; 48 pp.), lists state-by-state the holdings of the major federal land-management agencies—the Forest Service, Bureau of Land Management, Fish and Wildlife Service, and National Park Service, which together account for 95 percent of government-owned land. In all, the GAO says, the federal government owns approximately 650 million acres, about 30 percent of the nation's surface area.

Space Shuttle: Need to Sustain Launch Risk Assessment Process Improvements (GAO/NSIAD-96-73; 64 pp.), reports that following the 1986 *Challenger* explosion, NASA has adopted and maintained procedures to encourage "per-

sonnel at all levels to voice their views on safety issues to management." But the GAO notes that the space agency still relies mainly on "engineers' judgement to assess and prioritize significant shuttle program risks," and has lagged in adopting probabilistic risk assessments. The report also expresses concern about the effects on safety of budget stringencies and the transition to private operation of the Shuttle.

Order from: USGAO, PO Box 6015, Galtersburg, Md. 20884-6015; tel. 202/512-6000; fax 301/258-4066.

From the American Sociological Association (ASA):
Social Causes of Violence: Crafting a Science Agenda (114 pp., \$10 for ASA members, \$15 for others), by Felice J. Levine, ASA Executive Officer, and Katherine J. Rosich, ASA consultant, derived from an ASA-sponsored workshop in 1993. Says the "time is ripe" for a major expansion of violence research "with strong collaboration among federal research agencies and, to the extent possible, the involvement of private foundations." Strong interest exists in the research community, the report states, but participation has been discouraged by financial ups and downs and limited funding which "have produced gaps and fragmentation in our knowledge and hampered our ability to draw comprehensive inferences." The report notes the strong professional interest in the violence research program now underway at the National Science Foundation, with funding of \$12.2 million over five years [SGR, January 15], and argues for further expansion at NSF, the National Institute of Mental Health and other agencies of large-scale and long-term studies, training programs, post-doctoral appointments, increased data collection, etc.

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Official reports and other publications of special interest to the research community

(Copies of publications listed here are available from the indicated sources—not from SGR)

From the National Academy of Sciences:

The Costs of Research: Examining Patterns of Expenditures Across Research Sectors (23 pp., no charge), says universities, industrial firms and federal agencies differ little in apportioning direct and indirect costs for laboratory research. A sampling of labs, says the report, "does not support allegations of excessive research support costs" in large universities. Direct costs in the three research sectors were reported at between 64 and 67 percent, with the balance designated as indirect costs. The study, conducted pro bono by the Arthur Andersen consulting firm, used data supplied by seven major universities, 13 high-tech industrial firms and 13 federal labs—expanding upon an initial group that was reported on in 1994. Confidentiality was assured the respondents, and apart from listing their names, nothing specific is disclosed about any of them. Various limitations of the study are modestly acknowledged, including the small sample size and the fact that "neither the quantity, quality, nor value of the research carried out by the diverse organizations were evaluated." Also untouched were comparative costs of specific research tasks in the three sectors. The report was issued by the NAS Government-University-Industry Research Roundtable, an Academy creation designed to nourish sympathy for university-based research in government agencies, industrial firms and beyond.

Order from: National Academy of Sciences, Government-University-Industry Research Roundtable, NAS 340, 2101 Constitution Ave. NW, Washington, DC 20418; tel. 202/334-3486; fax 202/334-1505.

Careers in Science and Technology: An International Perspective (182 pp., no charge), proceedings of a conference, "Trends in Science and Technology Careers," in Brussels in 1993, with some 40 participants from the US, Europe and Asia discussing improvement of data collection and enlarging the activities of international organizations "in relevant areas of policy formulation." Walter A. Rosenblith, of MIT, chaired the organizing committee for the conference.

Order from: National Academy of Sciences, Office of Scientific and Engineering Personnel, Room TJ-2093, 2101 Constitution Ave. NW, Washington, DC 20418; tel. 202/334-2700; fax 202/334-2725.

Resources for Teaching Elementary School Science (288 pp., \$17.95, plus \$4 for shipping), an extensive directory of curriculum materials, guides for teachers and other resources in the life, earth and physical sciences and "multidisciplinary and applied science"—all described as "hands-on and inquiry-centered." The directory was produced by the National Science Resources Center, jointly

operated by the National Academy of Sciences and the Smithsonian Institution. Included is a list of nearly 300 museums with science programs for class visits, plus descriptions of government and professional organizations that can assist science teachers. Arithmetic and math, not directly addressed in the volume, are covered in other works, SGR was told. *Resources* is intended for use with *National Science Education Standards* (262 pp., \$19.95, plus \$4 for shipping), published last year by the Academy.

Careers in Science and Engineering: A Student Planning Guide to Grad School and Beyond (134 pp., \$11.95, plus \$4 for shipping), a product of our time, a homey guide of advice for grad students, who are warned that "even the most dedicated students will not necessarily find a career into their chosen occupation and should be prepared to look elsewhere." Plan ahead, gather information, consider various possibilities, says the guide, which also wanders off into such inanities as "Use computer aids to evaluate your attributes," and "Consider everyone you meet along the way as a potential helper." The guide echoes the vocational litany of the National Academy of Sciences and the White House Office of Science and Technology Policy, namely, that alternative careers are beckoning to science and engineering graduates, though evidence is paltry. Included are 13 profiles of graduate experience, including: "How Does a Geneticist/Molecular Biologist Get to be a Patent Lawyer?" "How Does a Chemistry Major Get to be a Professor?" and "How Does a Mathematics Major Get to be an Actuary?" The "Project Guidance Group" for the *Guide* was chaired by Arden L. Bement, Professor of Engineering, Purdue University. Deborah D. Stine headed the Project Staff.

Order from: National Academy Press, 2101 Constitution Ave. NW, Washington, DC 20418; tel. 1-800/624-6242 or 202/334-3313.

From the New Jersey Commission on Science and Technology:

Science & Technology News (no charge), quarterly newsletter covering the State's extensive programs to promote high-tech industry for job creation and economic growth. Budgeted this year at \$15 million in state funds, the program is down from a peak of \$24 million in 1989, but insiders consider that not so bad, given massive reductions in state spending. Leveraged funds from non-state sources are reported at \$47 million for the year. The spring issue of the newsletter (12 pp.) reports on expansion of incubator facilities for startup firms and awards under the federal Small Business Innovation Research program—143 of them in 1994, totaling nearly \$21 million for state firms. There's also a directory of state-supported centers for biotechnology, advanced materials, environmental protection technologies, information technologies, manufacturing, venture development, management assistance, and intellectual property.

Order from: New Jersey Commission on Science and Technology, 28 West State Street, CN 832, Trenton, New Jersey 08625-0832; tel. 609/984-1671; fax 609/292-5920; Internet e-mail: njcst@njcst.gov

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